

## ABSTRACT

Embodiments of the invention generally provide a processing system for removing contaminant particles from substrates. The processing system generally includes at least one processing enclosure having a particle removal assembly positioned therein. The particle removal assembly generally includes a substrate support member, a broadband actuator in communication with the substrate support member, and an air knife assembly positioned proximate the substrate support member. The air knife assembly is generally configured to generate a high pressure laminar flow of gas across the surface of the substrate. The processing system further includes a substrate transfer enclosure in communication with each of the at least one processing enclosures, at least one substrate supply source in communication with the substrate transfer chamber, and at least one transfer robot positioned in the substrate transfer enclosure, the transfer robot being configured to transfer substrates between the at least one substrate supply source and the at least one processing enclosure.

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